PROGRESS

OF

MEDICAL SCIENCE

MEDICINE

UNDER THE CHARGE OF

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Detoxication of Diphtheria and Tetanus Toxins.—J. SCHUMACHER (*Deutsch. med. Wchnschr.*, 1915, xli, 310) reports the results of experiments he has performed to protect animals from fatal doses of diphtheria and tetanus toxins. Sieber has shown that abrin, diphtheria, and tetanus toxins can be rendered non-toxic by previous treatment with hydrogen peroxide. The latter substance is not suitable for intravenous use. Schumacher selected ammonium persulphate, which is also a strong oxidizer, for his experiments. It is relatively non-toxic. The experiments were performed upon guinea-pigs. The animals were given eight times the lethal dose. The controls all died within twenty-four hours after receiving the toxins. In a second series of animals, 2 c.c. of 5 per cent. ammonium persulphate was allowed to act upon the diphtheria toxin in the syringe for ten minutes before the injection was made. These animals showed no symptoms whatever. Intravenous administration of 2 c.c. of 5 per cent. ammonium persulphate solution ten minutes before giving the toxin delayed the death of the animal twelve hours. Similar results were obtained with tetanus toxin. A more detailed study of this question will appear in a later communication.

Leukopenia and Aneosinophilia following Typhoid Vaccination.—FRIEDA SCHNEIDER (*Deutsch. med. Wchnschr.*, 1915, xli, 393) confirms the findings of others to the effect that agglutinins for typhoid bacilli appear in the blood following antityphoid vaccination. She has found agglutination positive in dilutions of 1–160 to 1–320. This finding, of course, renders the Widal test of little value in suspected typhoid in those who have been vaccinated. The author investigated other blood changes found in typhoid fever, *i. e.*, leukopenia and aneosinophilia. Examination showed that both of these phenomena made their appearance within a few days after the third injection of typhoid vaccine and that they may persist for several months. This should be borne in mind in the investigation of vaccinated individuals.

Agglutination of the Spirocheta Pallida.—A. KISSMEYER (*Deutsch. med. Wchnschr.*, 1915, xli, 306) has investigated the possibility of an agglutinin formation in syphilitics, since the literature of the subject is rather contradictory. In studying human syphilitic sera, the author was able to demonstrate an agglutination in each stage of the disease, though the phenomenon was an inconstant one. He looks upon agglutination in dilution of 1 to 100 occurring after two to three hours in the incubator at 37° as positive. Occasionally, a non-syphilitic serum will cause agglutination in dilutions of 1 to 50. Most positive sera will also cause agglutination in dilutions of 1 to 100. In one patient in the primary stage of the disease, agglutinins appeared in the blood before the Wassermann reaction became positive. In congenital syphilis the agglutinin reaction was strongly positive in patients under twelve years of age. With increasing age there was a decrease in the intensity of the reaction. By injection of killed spirochetes into rabbits the author was able to produce sera having very strong agglutinating power. The effect of treatment on the presence or absence of agglutinins in the sera of syphilitics is under investigation.

The Bacterial Therapy of Typhoid Fever.—Encouraged by the reports of Ichikawa and of Kraus and Mazza, M. RHEIN (*München. med. Wchnschr.*, 1915, lxii, 427) has tried the bacterial therapy on a series of thirty-three patients suffering with typhoid fever. He prepared his vaccine as follows: To 5 c.c. of Halle typhoid vaccine and 0.5 gm. pure phenol, physiological salt solution was added to a volume of 100 c.c. Of this preparation he employed 0.6 to 1.4 c.c. diluted with 8 c.c. physiological salt solution for intravenous injection. Within one to two and a half hours a rise in temperature and a chill of varying severity and duration (five to thirty minutes) occurred in 94 per cent. of the cases. Injections were made only in patients in whom the diagnosis was clear clinically or bacteriologically. Three of the patients treated showed paratyphoid bacilli A in the blood. Patients exhibiting the step-like curve of defervescence were excluded, as were also those suffering with complications such as pneumonia, pleurisy, nephritis, or myocarditis. Status typhosus, with delirium and bronchitis, but with good pulse, was not looked upon as contra-indication for injection of vaccine. Thirty-three patients received the injections and six of these had a second injection. In 9 cases there was a critical fall of temperature within one day after the first injection and in 1 case after the second. In 13 cases a favorable effect on the temperature curve was noted after the first injection and in 3 cases after the second injection. In 8 patients there was no effect whatever on the temperature curve, and in 2 of these a second injection was also without visible effect. On the other hand, 3 patients who were unaffected by the first injection reacted favorably after a second. In the 3 cases of paratyphoid fever a critical fall of temperature was not observed, but